

REMARKS/ARGUMENTS

Claims 14-21 have been examined. Claims 14-21 have been rejected under 35 U.S.C. § 103(a) over Takahisa et al. (Japanese Patent No. 08-222633) in view of Jeng (Japanese Patent No. 10-074755). Claims 22-28 have been added hereby. The drawings have been amended. In light of the attached amendments and below remarks reconsideration of the present application is respectfully requested.

In paragraph 1 of the Office Action it is indicated that Fig. 6 and 7 should be designated as "Prior Art". Applicants submit herewith redlined copies of these figures including the legend "Prior Art". Approval of these changes to the figures is respectfully requested. Upon such approval, Applicant shall submit formal drawings incorporating these changes.

In paragraph 2 of the Office Action claims 14-21 have been rejected under §103 over Takahisa in view of Jeng. The Office Action admits that the main reference Takahisa fails to teach that the interlayer insulating film includes a hydrogen resident film. The Office Action proports to cure this deficiency in the main reference with that of Jeng. Applicants respectfully disagree.

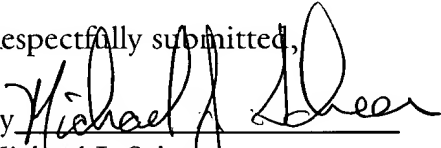
The present invention, as recited in independent claims 14 and 22, is characterized in an interlayer insulating film containing a hydrogen resident film covering a MOS transistor, a wiring layer formed on the interlayer insulating film and a surface protection layer having a hydrogen shielding function formed over the wiring layer. When the substrate in accordance with the present invention is subjected to heat treatment, the hydrogen resident film can supply hydrogen to the channel region in order to reduce the damage the process might otherwise experience without the hydrogen resident film. In the prior art as shown in Fig. 7 of the present application, a hydrogen containing film C is formed on a gate of electrode. If the gate electrode is a silicide layer, it will block hydrogen. In accordance with the present invention though, the hydrogen containing film is formed in an interlayer insulating film which covers the MOS transistor.

In contrast to the present invention as recited in independent claims 14 and 22, Jeng teaches to form an HSQ film 18, which is a hydrogen resident film, covering the wiring 14. Jeng then teaches a capping layer 20 formed over the HSQ film. The capping layer is typically a Si_3N_4 layer which is a hydrogen blocking film. In contrast to the present invention though, in the structure of Jeng, the hydrogen containing HSQ film releases hydrogen, but the hydrogen once released, is blocked by the wiring and the capping layer. Therefore, the function of effectively supplying hydrogen to the channel layer can not be achieved in Jeng. In contrast to Jeng though, in the present invention hydrogen is effectively supplied to the channel layer thereby achieving the significant benefits as disclosed in the present specification.

Applicant therefore respectfully submits that even if Takahisa and Jeng were combined, the result in combination would not read on the present invention as recited in independent claims 14 and 22 of the present application. Any combination of Takahisa and Jeng does not suggest the present invention wherein a hydrogen resident film is contained in an interlayer insulating film, which can effectively supply hydrogen to a channel region of the semiconductor substrate. Furthermore, neither of the cited of references teach the formation of a silicide layer on a gate electrode and on source/drain regions as recited in newly presented independent claim 22. Accordingly, withdrawal of the § 103 rejection on the basis of the combination of Takahisa and Jeng is respectfully requested.

Dated: April 8, 2002

Respectfully submitted,

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FIG.6 (Prior Art)

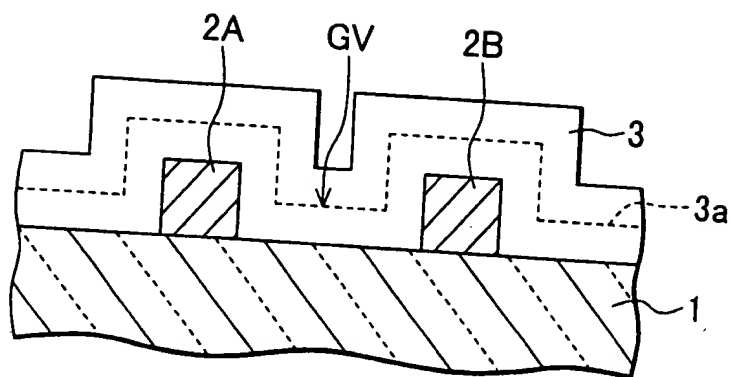


FIG.7 (Prior Art)

